WHAT IS CLAIMED IS:

1. A method for producing a vertical-cavity surface emitting laser diode, comprising steps of:

a) sequentially epitaxying an n-type cladding layer, an active layer with quantum well structure and a p-type cladding layer on a substrate;

b) partially etching said p-type cladding layer, said active layer and an upper portion of said n-type cladding layer to expose a part of said n-type cladding layer;

c) oxidizing lateral surface of said p-type cladding layer by wet oxidation to form an insulating area;

d) disposing an annular p-type ohmic contact electrode on said p-type cladding layer close to said insulating area, and disposing and an n-type ohmic contact electrode on said exposed n-type cladding layer;

e) depositing an upper DBR pair of dielectric material on said p-type cladding layer at least within said p-type ohmic contact electrode;

f) bonding a glass substrate upon said upper DBR pair;

g) removing said substrate provided in step a);

h) depositing a bottom DBR pair of dielectric material beneath said n-type cladding layer;

i) disposing a metal conductive layer beneath said bottom DBR pair;

j) plating a permanent substrate beneath said metal conductive layer; and

k) removing said glass substrate.

2. The method as claimed in claim 1, wherein said substrate of step a) is an InP substrate.

3. The method as claimed in claim 1, wherein said substrate of step a) is a GaAs substrate.

4. The method as claimed in claim 1, wherein said substrate of step a) is a Al2O3 sapphire substrate.

5. The method as claimed in claim 1, wherein said upper DBR pair is a metal reflective layer.

6. The method as claimed in claim 1, wherein said bottom DBR pair is a metal reflective layer.

7. The method as claimed in claim 1, wherein said upper DBR pair is coated within said p-type ohmic contact electrode.

8. The method as claimed in claim 1, wherein said upper DBR pair is made from a material selected from the group consisting of $ZnSe/MgF_2$, SiO_2/Si, Si_3N_4/Si, TiO_2/Si, Ta_2O_5/Si, HfO_2/SiO_2, Ta_2O_5/SiO_2, ZrO_2/SiO_2, TiO_2/SiO_2.

9. The method as claimed in claim 1, wherein said glass substrate is bonded to said upper DBR pair and said p-type ohmic contact electrode by being previously coated with wax therebeneath.

10. The method as claimed in claim 1, wherein said substrate of step a) is removed by chemical mechanical polishing.

11. The method as claimed in claim 1, wherein said substrate of step a) is removed by etching.

12. The method as claimed in claim 1, wherein said bottom DBR pair is formed beneath said n-type cladding layer by coating.

13. The method as claimed in claim 1, wherein said bottom DBR pair is made from a material selected from the group consisting of $ZnSe/MgF_2$, SiO_2/Si, Si_3N_4/Si, TiO_2/Si, Ta_2O_5/Si, HfO_2/SiO_2, Ta_2O_5/SiO_2, ZrO_2/SiO_2, TiO_2/SiO_2.

14. The method as claimed in claim 1 further depositing a transparent conductive film on said p-type ohmic contact electrode.

15. The method as claimed in claim 1further comprising step g') and step h') respectively after said step g) and step h), and thus steps g'), h), h') and i) being as follows:

g') disposing a photoresist layer on a part of bottom surface of said

n-type cladding layer mainly corresponding to said active layer, and disposing an insulating layer on the other bottom surface of said n-type cladding layer;

h) depositing a bottom DBR pair beneath said photoresist layer and said insulating layer;

h') removing said photoresist layer;

i) disposing a metal conductive layer beneath said bottom DBR pair corresponding to said insulating layer.

16. A vertical-cavity surface emitting laser diode, comprising:

an n-type cladding layer with a top surface partially etched;

an active layer with quantum well structure formed on the un-etched surface of said n-type cladding layer;

a p-type cladding layer formed on said active layer;

an insulating area formed surrounding said p-type cladding layer;

an n-type ohmic contact electrode deposited on said etched surface of said n-type cladding layer;

an annular p-type ohmic contact electrode deposited on said p-type cladding layer close to said insulating area;

an upper DBR pair of dielectric material formed on said p-type cladding layer at least within said annular p-type ohmic contact electrode;

a bottom DBR pair of dielectric material formed beneath said n-type cladding layer;

a metal conductive layer formed beneath said bottom DBR pair; and

a permanent substrate formed beneath said metal conductive layer.

17. The vertical-cavity surface emitting laser diode as claimed in claim 16, wherein said upper DBR pair is made from a composite material selected from the group consisting of $ZnSe/MgF_2$, SiO_2/Si, Si_3N_4/Si, TiO_2/Si, Ta_2O_5/Si, HfO_2/SiO_2, Ta_2O_5/SiO_2, ZrO_2/SiO_2, TiO_2/SiO_2.

18. The vertical-cavity surface emitting laser diode as claimed in claim 16, wherein said bottom DBR pair is made from a composite material

selected from the group consisting of $ZnSe/MgF_2$, SiO_2/Si, Si_3N_4/Si, TiO_2/Si, Ta_2O_5/Si, HfO_2/SiO_2, Ta_2O_5/SiO_2, ZrO_2/SiO_2, TiO_2/SiO_2.

19. The vertical-cavity surface emitting laser diode as claimed in claim 16 further comprising a transparent conductive film formed on said p-type ohmic contact electrode.

20. The vertical-cavity surface emitting laser diode as claimed in claim 16 further comprising an insulating spacer between said n-type cladding layer and said bottom DBR pair, and said insulating spacer is formed beneath said n-type cladding layer but not overlaps main area of said active layer, and said metal conductive layer and said permanent substrate are formed beneath said bottom DBR pair only corresponding to said insulating sapcer.